

## CARTRIDGE DISPENSING SYSTEM AND METHOD

### BACKGROUND OF THE INVENTION

Wiping sheets or wipes have been made from a variety of materials which can be dry or wet when used. Wipes can be moistened with a variety of suitable wiping solutions, and are then usually referred to as wet wipes. Typically, wipes have been stacked in a container in either a folded or unfolded configuration. For example, containers of wet wipes have been available wherein each of the wet wipes stacked in the container has been arranged in a folded configuration such as a c-folded, z-folded or quarter-folded configuration as are well known to those skilled in the art. Sometimes the folded wet wipes have also been interfolded with the wet wipes immediately above and below in the stack of wet wipes. In yet other configurations, the wipes have been placed in the container in the form of a continuous web of material of similarly weakened line connected sheets from the first sheet to the last which includes perforations to separate the individual wipes and which wipes can be stacked on top of each in a fan folded manner or wound into a roll. Such wipes and wet wipes have been used for baby wipes, bath tissue, hand wipes, household cleaning wipes, industrial wipes and the like.

Wipes, and particularly wet wipes, have been traditionally dispensed in sheet form from a tub like container with a hinged lid on the top. The lid is opened and individual or singularized sheets of the wipes are removed from the tub. Another type of container that has been used for wet wipes provides a roll of wipes in which the wipes are pulled from the top of the container in a direction that is parallel to the axis of the roll. These wipes are pulled from the center of a hollow coreless roll that has perforated sheets. These containers generally have a pivoting snap top lid that is opened to expose a piece of the wipes that can then be pulled to remove the desired amount of wipes. Once pulled out the wipes can then be torn off, usually at a perforation, and the lid closed.

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Wipes can be any wipe, towel, tissue or sheet like product including natural fibers, synthetic fibers, synthetic material and combinations thereof. For example, wipes can be any sheet like product that is wet or moist or becomes wet during use or prior to use. Wet wipes can be dispersible when in contact with water or may be non-dispersible. Examples of wet wipes are disclosed in US application serial numbers 09/564,531 and 09/565,623, each filed May 4, 2000, US application serial no. 09/223,999 filed December 31, 1998, US application serial no. 09/900,698 filed July 6, 2001, and US application serial no. 09/871,019 filed May 31, 2001, the disclosures of which are incorporated herein by reference, as well as, by commercially available KLEENEX® brand COTTONELLE®FRESH folded wipes and HUGGIES® brand baby wipes. Embodiments of dispensers are described in US application serial number 09/659,283 and 09/659,307, each filed September 12, 2000, and US application serial no. 09/841,323 filed April 24, 2001 and 09/900,359 filed July 6, 2001, the disclosures of which are incorporated herein by reference.

Existing containers for wipes have not been completely satisfactory. For example, this is due at least in part to the ability of the container to serve as both a storage container and a dispenser, and in a rather simple and economical form. Stated differently, as another example, this can be due in part to the container having primarily one use. In response to these or other difficulties or problems, for example, new container configurations and characteristics have been invented as discussed hereafter.

## SUMMARY OF THE INVENTION

A system and method for storing and dispensing wipes is provided, which in general, can include a cover and a cartridge having a plurality of separably joined wipes therein. The cartridge can be used with the cover alone to store and dispense wipes or in combination with a separate dispenser where the cartridge can be placed in the separate dispenser and then the wipes can be stored in and removed from the dispenser.

More particularly, in one aspect, the invention provides a dispenser for storing and dispensing a plurality of separably joined wipes. The dispenser includes a cartridge comprising a bottom wall and at least one side wall extending from the bottom wall. The walls are connected together to define a chamber and an opening in the chamber is located at a top portion of the side wall opposite the bottom wall. A cover is removably self-fastenable to the top portion of the side wall. The cover and cartridge cooperate to seal the plurality of separably joined wipes in the chamber. An elongated dispensing passage is disposed adjacent the top portion of the side wall. Wipes from the plurality of separably joined wipes can be dispensed from the chamber by the wipes passing directly between the cover and the top portion of the side wall and out the dispensing passage when the cover is fastened to the cartridge.

In another aspect, the invention provides a dispenser for storing and dispensing a plurality of separably joined wipes. The dispenser includes a cartridge comprising a bottom wall and at least one side wall extending from the bottom wall. The walls are connected together to define a chamber and an opening in the chamber is located at a top portion of the side wall opposite the bottom wall. A cover is removably fastenable to the top portion of the side wall, the cover and cartridge cooperating to seal the plurality of separably joined wipes in the chamber. The cover comprises a top and at least one top side wall extending from the top. The top side wall and the side wall each have at least a portion extending past the other and at the portion each engages the other in an interference relationship. An elongated dispensing passage is disposed adjacent the top portion of the side wall. Wipes from the plurality of separably joined wipes can be dispensed from the chamber by the wipes passing directly between the cover and the top portion of the side wall and out the dispensing passage when the cover is fastened to the cartridge.

In yet another aspect, the invention provides a method for storing and dispensing a plurality of separably joined wipes. The method includes providing a cartridge having a chamber with the plurality of separably joined wipes in the chamber, the plurality of separably joined wipes having a seal over them to seal the plurality of separably joined wipes from the environment.

The method further includes removing the seal from the plurality of separably joined wipes. The method also includes securing a removably self-fastening cover to the cartridge over the chamber to seal the plurality of separably joined wipes in the chamber. Then, the method includes dispensing wipes from the chamber by passing wipes between the cover and the cartridge and out an elongated dispensing passage when the cover is fastened to the cartridge.

In still another aspect, the invention provides a method for storing and dispensing a plurality of separably joined wipes. The method includes providing a cartridge having a chamber with the plurality of separably joined wipes in the chamber, the cartridge having a seal over the chamber to seal the plurality of separably joined wipes in the cartridge. The method also includes removing the seal from the cartridge. The method further includes securing a cover to the cartridge over the chamber to seal the plurality of separably joined wipes in the chamber wherein the cover comprises a top and at least one top side wall extending from the top wherein the top side wall and a side wall from the cartridge each have at least a portion extending past the other and at the portion each engages the other in an interference relationship. Still further, the method includes dispensing wipes from the chamber by passing wipes between the cover and the cartridge and out an elongated dispensing passage when the cover is fastened to the cartridge.

In yet other aspects, the invention provides particular configurations and characteristics for the elongated dispensing passage, the cartridge and the cover, as well as multiple uses for the cartridge and various steps for using the invention.

#### Definitions

As used herein, "self-fastenable" means the ability of two portions or components of the invention to maintain themselves fastened together without the aid of another external member once the two are placed in the fastened position, for example, due to the configuration of the two (e.g., interference

relationship), the use of adhesive or an opposing surface joining mechanism between the two, or other mechanism contained by or within the two.

As used herein, wipes of the invention are considered "separably joined", "separably joining" (and variations thereof) when each wipe of a plurality, e.g., in a stack or roll of wipes, is engaging any adjacent wipe while in the dispenser or package such that withdrawing the leading wipe through the dispenser or package dispensing passage or gap also withdraws at least a portion of the following wipe through the passage before the leading wipe and the following wipe separate completely from each other. Such engaging of any adjacent wipe can include an interfolded relationship or a non-interfolded relationship in combination with one or more of the following between adjacent wipes: adhesive, friction, cohesion, fusion bonding (e.g., ultrasonic welding, heat sealing), mechanical entanglement (e.g., needle punching, steam sealing, embossing, crimping), autogeneous bonding, and/or weakened line(s) (e.g., perforations, zones of frangibility, score line(s), crush cutting).

As used herein, the term "wet wipe" refers to a fibrous sheet that has a liquid applied thereto during manufacture. The amount of liquid or solution contained within each wet wipe can vary depending upon the type of material being used to provide the wet wipe, the type of liquid being used, the type of container being used to store the stack of wet wipes, and the desired end use of the wet wipe. Generally, each wet wipe can contain from about 25 to about 600 weight percent or from about 200 to about 400 weight percent liquid based on the dry weight of the wipe, for improved wiping in certain situations. To determine the liquid add-on, first the weight of a just-manufactured dry wipe is determined. Then, the amount of liquid by weight equal to the weight of the just-manufactured dry wipe, or an increased amount of liquid measured as a percent add-on based on the weight of the just-manufactured dry wipe, is added to the wipe to make it moistened, and then known as a "wet wipe" or "wet wipes". The liquid can include a fragrance and/or an emollient and can serve to aid the fibrous sheet in retention of materials, which are to be wiped up during its utilization.

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It is to be understood that both the foregoing general description and the following detailed description are exemplary and are intended to provide further explanation of the invention claimed. The accompanying drawings, which are incorporated in and constitute part of this specification, are included to illustrate and provide a further understanding of the invention. Together with the description, the drawings serve to explain various aspects of the invention.

## DRAWINGS

The present invention will be more fully understood and further features will become apparent when reference is made to the following detailed description of the invention and the accompanying drawings. Like parts depicted in the drawings are referred to by the same reference numerals.

Figure 1 is a front view of a dispenser including a cover and a cartridge, in accordance with the invention.

Figure 2 is a perspective side view of the dispenser in Figure 1, now with a tail of wipes protruding from the dispenser and the view turned upside down from that seen in Figure 1.

Figure 3 is a cross sectional view of the dispenser in Figure 1 taken along the line A-A and the line B-B.

Figure 4 is an enlarged cross sectional view of the circled portion G of Figure 3.

Figure 5 is an alternate enlarged cross sectional view of the circled portion G of Figure 3, now showing the tail of wet wipes in and protruding from the dispenser.

Figure 6 is a perspective top view of the inside of the cover in Figure 1.

Figure 7 is a cross sectional view of a portion of the cover in Figure 6 taken along the line I-I.

Figure 8 is top view of the cover in Figure 1, but without any engraving or embossing or the like on the top surface.

Figure 9 is a top view of a cartridge like that in Figure 1.

Figure 10 is a back side view of the cartridge of Figure 9.

Figure 11 is an end side view of a cartridge like that seen in Figure 9, but now having multiple vertical protrusions.

Figure 12 is a top view of a package of cartridges like the cartridge in Figure 9.

5 Figure 13 is a perspective view of a separate dispenser to contain the cartridge and roll of wet wipes in Figure 1, and here with a tail of wet wipes partial dispensed.

10 Figure 14 is an exploded perspective view of the dispenser of Figure 13.

15 Figure 15 is a cross sectional view of the dispenser of Figure 13 taken along the line K-K and without a roller.

20 Figure 16 is a partial cross sectional view of the cartridge and roll of wipes seen in Figure 15 (and which corresponds with the line J-J in Figure 9), now with a moisture and/or bacterial resistant seal attached to the cartridge lid before use of the roll of wipes.

#### DETAILED DESCRIPTION OF THE INVENTION

Referring to Figures 1 to 5, for example, there is depicted a dispenser 10 for storing and dispensing a plurality of separably joined wipes 5. The dispenser includes a cartridge 11. The cartridge has a bottom wall 13 and at least one side wall 15 extending from the bottom wall. The walls 13 and 15 are connected together to define a chamber 21 and an opening 23 in the chamber located at a top portion 17 of the side wall opposite the bottom wall. The top portion 17 of the side wall(s) can include a lip 19 extending outwardly about the top portion of the side wall.

25 A cover 30 is removably self-fastenable to the side wall, which can advantageously be at the top portion 17 of the side wall. The cover 30 and cartridge 11 cooperate to seal the plurality of separably joined wipes 5 in the chamber 21. An elongated dispensing passage 40 is disposed adjacent the top portion 17 of the side wall. Wipes from the plurality of separably joined wipes 5 can be dispensed from the chamber by the wipes passing directly between the cover 30 and the top portion 17 of the side wall and out the

dispensing passage 40 when the cover 30 is fastened to the cartridge 11 (e.g., Figures 2 and 5). The cover includes a top 32 and can include at least one top side wall 34 extending from the top. The cover can be partially to completely removably fastenable or removably self-fastenable, e.g., a first portion rigidly and rather permanently fastened to the cartridge and the adjoining portion of the cover (e.g., by a hinge or living hinge) being removably fastenable or removably self-fastenable to the cartridge.

When the cartridge and the cover are fastened together, the top side wall 34 and the side wall 15 can each have at least a portion extending past the other such that at the portion each engages the other in an interference relationship, as seen in circled portion H of Figure 3. More particularly, the circled portion H shows a triple seal at a perimeter of the lip 19, though the invention is not so limited. The only type of sealing relationship necessary for the invention is one that maintains the cover in proximity to the cartridge so as to be able to retain the plurality of wipes 5 in the chamber while dispensing individuals wipes from the dispenser. Advantageously, the better the sealing relationship between the cover and the cartridge the better the chamber will be sealed to keep the outer environment out and the environment surrounding the wipes inside the chamber (e.g., for better moisture retention in the case of wet wipes). For example, there can be a first seal 25a at an under edge of the lip and/or a second seal 25b at an outer edge of the lip and/or a third seal 25c at a top edge of the lip. In this way, the cover can be friction fit or interference fit to the cartridge and such a relationship could be continuous to intermittent to a single location along each side wall 15. Alternatively, only one or two of seals 25a, 25b and 25c can be used and, e.g., the other one or two seals need not be used. For example, if there is an adhesive relationship between the cover 30 and the top portion 17 then only seal 25c may be needed, and additionally top side walls 34 could also be eliminated if desired. Alternatively, if there is a sliding type of interference relationship between the cover and the top portion then there may be a seal at 25a and/or 25c but not at 25b such that there is a space between the outer edge of the lip 19 and the

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adjacent cover side wall 34. In this way, the cover could slide onto the top portion, in a lengthwise or widthwise direction, and lock in place as desired.

A related aspect of the invention concerns attaching the cover to the lip in at least two locations about the lip. For example, this can include at two 5 opposite side walls 15, or at a corner location, or a variety of other paired locations which would enable the cover to be removably self-fastenable to the top portion to seal the wipes in the chamber. Labeled portions C-C, D-D, E-E and F-F in Figure 1 can have a cross sectional representation similar to that seen in circled portion H of Figure 3. In the exemplary embodiment, there is a 10 relationship between the cover and the cartridge like that in circled portion H for the corners at C-C and F-F on opposite sides of the elongated dispensing passage 40, but throughout the length direction 44 of the passage the relationship between the cover and cartridge can be like that shown in G of Figure 3, Figure 4, and/or Figure 5.

Also referring to Figures 6 to 8, the elongated dispensing passage 40 could be formed in the cartridge or the cover, although the drawings only show it formed in the cover. When formed in the cover 30, the passage can be formed by one of the top side walls 34 being flared outwardly away from the lip 19. For example, the elongated dispensing passage could be flared out and extend in a range from about co-planar with the top 32 to about 15 perpendicular with the top such that it extends from above the lip to below the lip. Advantageously, the passage is bounded on the top by the top side wall of the cover being flared out in a range of about 30° to about 60°, and advantageously about 40° to about 50° (e.g., Figures 3 to 5 and 7). The 20 elongated dispensing passage can extend in the length direction 44 a length greater than, co-extensive with, or shorter than a width 6 of the wipes depending on desired dispensing and wipes characteristics.

The elongated dispensing passage 40 can include a rib 42 (Figures 4 to 7, e.g.) projecting from the top side wall. The rib can act to provide 25 additional tension between the cover and the cartridge to seal the chamber along that side wall of the cartridge. Additionally or alternatively, the rib can act to space the cover from the lip 19, except where the rib is adjacent the lip,

in order to reduce the dispensing force (i.e., by reduced surface contact) between the wipe versus the cover and cartridge when the wipe passes directly between the cover and the top portion of the side wall and out the dispensing passage (e.g., Figure 5). The rib can also be varied in size and dimension to alter dispensing forces and/or to emphasize or de-emphasize one of both of the features just discussed. The rib 42 can extend the full length of the elongated dispensing passage or extend only a portion thereof, and rib 42 can be continuous or discontinuous throughout the length.

The cartridge and cover can be made out of any suitable moisture and/or bacterial resistant material, such as plastic, or any light weight, inexpensive, disposable and recyclable material. For example, they could be made of a variety of polyolefin materials such as polypropylene, polyethylene, or combination thereof, high impact polystyrene, PVC, ABS, and/or laminates or composites with these materials. The cartridge and cover can be formed by a variety of techniques such as thermoforming, mechanical heat and crimping, and/or injection molding. The cartridge and cover can be partially or completely rigid to semi-rigid to flexible like a film.

Figures 9 to 12 show an example of a cartridge 11 of the invention. The cartridge has side walls 117, 118, 139 and 140 and bottom wall 141. The cartridge can have a lip 131 that, at least in part, forms the opening at the top of the cartridge. The cartridge can have ribs 132. The ribs can extend part way or all the way along the sides 139 and 140 and the bottom 141. The ribs 132 can cause grooves or indentations to form in the rolls, depending on the density of the roll and conditions of use. These grooves are not necessary to the use of the invention. The curvature of the cartridge bottom is between 40 and 45 degrees, and more particularly can be between 42 and 44 degrees. Figure 11 shows a similar cartridge 11 in all regards to Figures 9, 10 and 12, except for the multiple protrusions 169 on the cartridge side wall instead of just two. Figure 12 shows an example of a package of cartridges 11. In use this package would be filled with rolls of wet wipes, one for each cartridge. The cartridges would then be sealed by placing a totally or partially removable

5 seal 150 over the lips 131 (e.g., Figure 16). Also, the cartridges could be sealed individually or in other numbered groups.

10 The seal is moisture and/or bacterial resistant, e.g., any film or other thick to thin member of a semi-rigid to non-rigid/flexible characteristic, that can act to prevent moisture and/or bacteria from passing through the seal or between the seal and the cartridge. For example, the seal can be made of a variety of polyolefin materials such as polypropylene, polyethylene, or combination thereof, high impact polystyrene, PVC, ABS, and/or laminates or composites with these materials, and advantageously such materials would be formed into a desired film. The seal can be attached to the cartridge by heat sealing, adhesive, or other conventional mechanical or chemical techniques to join a film like material to the cartridge. With a seal secured across the opening of the chamber, as in Figure 16, a cover 30 can be fastened to the cartridge over the seal if desired.

15 The cartridge seal 150 can have a removable strip, for example, as taught (e.g., Figures 48 to 58d, inclusive, and supporting description) in co-pending U.S. Serial No. 09/909,408 filed July 19, 2001, which is incorporated herein by reference. Removal of this strip would result in a gap through which the wipes can be dispensed. In this configuration it may be useful to attach the tail of the wipes to the strip. As such, removal of the strip facilitates the threading of the wipes through the gap.

20 The cartridge 11 can be any size provided that it has the desired feature(s) of the invention. For example a cartridge that would be useful for application in the home would have side walls 117 and 118 that are less than 105 mm and side walls 139 and 140 that are less than 134 mm. Instead of protrusions 119, 120 and 121, the cartridge can have recesses at those locations, and the tray can have corresponding protrusions. Moreover, the cartridge can have ribs, like rib 132, along side walls 117 and 118. Figures 9 to 11 depict exemplary dimensions (in mm) that can be used for the cartridge 11 but the invention is not limited to these.

25 30 Rolls of wet wipes useful with the invention can contain from as little as a few linear inches (or cm) to more than 450 linear inches (11.43 m), to more

than linear 600 inches (15.24 m) to more than a thousand linear inches (25.40 m) of wet wipes. The rolls can have a web of material that can have any number of sheets. Usually, the sheets are separated by perforations that enable the sheet to be easily torn from the web but are strong enough that they will not separate while the web is being pulled from the dispenser. An example of a roll that is particularly useful for applications in the home is one that has a diameter of about 2 inches (50.8 mm) to about 3 inches (76.2 mm), of about less than 5  $\frac{1}{2}$  inches (139.7 mm), and advantageously has a diameter of about 3 inches (76.2 mm) and more advantageously of about 2-7/8 inches (73.0 mm). This roll has from about 400 linear inches (10.16 m) of wipes to about 1000 linear inches (25.40 m) of wipes. Without limitation, each sheet length can be from about 3 inches (76.2 mm) to about 10 inches (254.0 mm) and can be about 4.5 inches (114.3 mm). This roll can further have a density of from about 0.3 g/cc to about 1 g/cc, from about 0.5 g/cc to about 1 g/cc and preferably about 0.62 g/cc. A particular example of a roll can be one having a diameter of about 2 inches (50.8 mm) and containing about 450 linear inches (11.43 m) of wipe. Another particular example of a roll can be one having a diameter of about 3 inches (76.2 mm) and containing 450 linear inches (11.43 m) of wipes.

Perforation refers to the amount of cutting and the distance between the cuts in the perforation that separates the sheets in a roll. There are three parameters to this measurement: cut length, bond length and bond spacing. The bond spacing is equal to the sum of the cut length plus the bond length. By way of example, perforations that are useful with wet wipes are ones that have a bond length of about 0.02 inch (0.51 mm), a cut length of about 0.05 inch (1.27 mm), and a bond spacing of about 0.07 inch (1.78 mm), or one that has a bond length of about 0.04 inch (1.02 mm), a cut length of about 0.09 inch (2.29 mm) and a bond spacing of about 0.13 inch (3.30 mm), or one that has a bond length of about 2 mm, a cut length of about 4 mm and a bond spacing of about 6 mm, or a variety of other measurements depending on wipes and dispensing characteristics.

Referring to Figures 13 to 15, for example, the system can include a separate dispenser 100 that has a housing 102, which is capable of being mounted to a surface, such as a wall, a cabinet, an existing bath tissue dispenser, a toilet, a toilet tank, a stall wall, or a dashboard of an automobile. The dispenser has an opening that holds the cartridge 11, which contains the wipes. In this way, the cartridge can be independently mounted in the dispenser 100 without use of the cover 30, and then wipes within the chamber 21 can be dispensed from the separate dispenser.

More particularly as seen in Figures 14 and 15 for example, there is provided a dispenser 100, which has a housing 102, a tray 103, a cover 107, and a mounting assembly 108. The tray and the cover form a gap 104, through which a wet wipe can extend. That portion of the wipe extending through the gap can be referred to as a tail 136. The tray and cover additionally have recesses 105 that form an indentation that provides a finger hold, or point where a user can grasp the wet wipe to pull it from the dispenser. Although optional, the dispenser is also provided with a roller 106 for mounting and dispensing a roll of another product, such as dry or conventional bath tissue. In general the dispenser 100 illustrated herein can be used with or without conventional dry toilet or bath tissue.

The separate dispenser 100 and its various components can be made from, and have the shapes and sizes and functions, all as taught further in serial nos. 09/659283 and 09/659307, *supra*. Moreover, anti-bacterial agents, medicinal, botanical or skin and health agents can be added to the materials that are used to construct the components of the dispenser 100 and/or the cartridge 11. In particular any component that is in contact or associated with the wet wipes can have such an agent added to it.

The cover 107 can be provided with an inside rim (not shown) and a wiper 110. The cover inside rim and wiper cooperate with the lip 131 of the cartridge. In this way when the cover is closed the inside rim is brought against the lip of the cartridge and the wiper is similarly brought against the tray including the guides, as well as the lip of the cartridge. The cover 107 is designed to cooperate with the cartridge 11 to form a barrier to moisture loss

from the wet wipes. The cover can also be designed to cooperate with other components of the dispenser system to form a moisture barrier. The distance between the inside of the cover where the wiper is located and the tray can be less than the height of the wiper blade. Thus, in this configuration the wiper  
5 blade would be placed under compression against the lip, the tray, or the guides (not shown) or all of them depending on the position of the wiper.

Here the wiper blade would exert pressure on the wet wipes. The wiper can also be positioned so that it contacts the wet wipe but does not exert pressure against it, or be positioned so that it is a short distance above the wet wipe.  
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The amount of pressure that the wiper exerts on the wet wipe can vary depending upon several factors, including the purpose for the wiper, the material that the wiper blade is made from, the material that the wet wipe is made from and the formation of the cartridge lip 131.  
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The tray 103 can be made from any similar material to the housing or cover, and it can be the same material or different material from those of components. The tray can have side walls. The tray shown in the figures has a back wall, although one need not be provided if desired. The side walls can be provided with recesses. These recesses cooperate with protrusions 119, 120 and 121 on the cartridge. In this way the cartridge is securely, yet easily removably held in the dispenser. The tray and cartridge together result in a keyed type arrangement that allows the cartridge to be inserted fully or properly in only one orientation into the dispenser. Thus the two elements fit together in a manner similar to a lock and key. This assures that the roll of wipes will unwind from a predetermined orientation, i.e., from the bottom of the roll or the top of the roll.  
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Referring to Figures 1 and 2, for example, another aspect of the invention relates to a method for storing and dispensing the plurality of separably joined wipes 5. The method can include one or more of the following steps, which steps can be performed in a variety of orders or advantageously the order discussed hereafter. First, one can provide the cartridge 11 having the chamber 21 with the plurality of separably joined wipes 5 in the chamber, e.g., wet wipes. The cartridge can have a seal over  
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the chamber (e.g., Figure 16) to seal the plurality of separably joined wipes in the cartridge. For example, such a sealed cartridge could be like cartridge 111 discussed above or one purchased commercially from a store such as those currently sold by Kimberly-Clark Corporation of Neenah, Wisconsin under the name KLEENEX® brand COTTONELLE® FRESH ROLLWIPES™.

Alternatively or additionally, the plurality of separably joined wipes could separately have a seal over them (e.g., a sealed pouch or other type of wrapping for the plurality of separably joined wipes alone) and the wipes and separate seal would reside in the chamber of the cartridge before use. The cartridge is then separated from any unnecessary packaging and the seal is removed from the plurality of separably joined wipes directly or from the cartridge, in order to gain access to the wipes. The tail of the wipes can then be positioned over the top portion 17 of the side wall. Next, the removably self-fastening cover 30 can be fastened to the cartridge (e.g., with a friction fit or other type of interference relationship) over the chamber to seal the plurality of separably joined wipes 5 in the chamber 21, and such that the tail of the wipes at least partially sticks out of the dispensing passage 40.

Finally, wipes can be dispensed from the chamber by a user grasping the tail outside the dispensing passage and then passing wipes between the cover and the cartridge and out the elongated dispensing passage 40 when the cover is fastened to the cartridge. Additionally, dispensing can include causing the wipes to travel in a first direction 8 (Figure 5) and then in a second direction 9 as the wipes travel into and then out the elongated dispensing passage. Further, the second direction 9 can be at least partially opposite the first direction 8, for example, in that direction 8 has a component of travel upwards towards the cover 30 and direction 9 has a component of travel downwards away from the cover 30. Still further, dispensing can include separating a leading wipe from a trailing wipe after at least a portion of the trailing wipe is out of the chamber 21 and the elongated dispensing passage 40 (e.g., Figure 2).

As an alternative to fastening the self-fastening cover 30 and/or to dispensing wipes from the cartridge with the cover fastened thereon, the

method can include removing the cover from the cartridge if the cover is so fastened (if not, then skip this step); mounting the cartridge with wipes in the chamber in the separate dispenser 100 without use of the cover; and dispensing wipes from the plurality of separably joined wipes from the

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separate dispenser.

Summarizing, in use a consumer would purchase the cartridge(s) with wipes sealed in the cartridge and remove a cartridge, use it with a cover 30 alone, or open the separate dispenser 100 and place the cartridge 11 in the separate dispenser. The seal over the wipes, e.g., or the separate seal or seal 150 over the lip of the cartridge or the strip in a seal like 150, can be removed either before placing the cover 30 on the cartridge or before placing the cartridge 11 in the separate dispenser 100 or after the cartridge 11 is inserted in the separate dispenser 100 if the separate dispenser is used. The end of the roll of wet wipes is then positioned in the gap 4 or elongated dispensing passage 40, respectively, and the cover 30 or 107, respectively, is then closed, thus providing an efficient system for storing and dispensing wet wipes.

Figure 13 shows the dispenser 100 in the closed condition with a tail of a wet wipe 136 protruding from gap 104 into the finger hold indentation that is formed by recess 105. In use the tail of the wet wipe would be grasped and pulled generally in the direction of arrow 135 causing the roll to unwind and the wipe to be dispensed from the dispenser. In use the wet wipe can also be subjected to forces tangential and perpendicular to the direction of arrow 135. If these forces occur the guides (not shown) and the wiper help to prevent the wipe from skating to one side of the gap and bunching up or binding.

Figure 15 shows the roll 134 as it is placed in a cartridge in a dispenser 100. The spiral line 138 is intended to represent the manner in which the roll is wound and depicts in that configuration a roll that is being unwound from the bottom. This also shows the relationship of the wiper 110 to the wet web during dispensing. Figure 16 shows the roll 134 in cartridge 11, with spiral line 138 indicating the wind of the roll. This figure also shows the relationship of the roll 134 and the ribs 132. As can be seen from this figure the roll is

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lifted off of the side and bottom walls of the cartridge by rib 132. Thus, the amount of surface area of the roll that is in contact with the cartridge is reduced. This in turn reduces the drag that the roll experiences from friction with the cartridge when the roll is turned.

5 The dispensing force can be equal to or less than, and

advantageously, considerably less than, the detach force for the plurality of separably joined wipes, e.g., roll of perforated wipes. In this way it is better assured that the wipes will be able to be pulled from, or removed from, the dispenser 10 or separate dispenser 100 without breaking at the perforation prematurely. Thus, a dispensing force of from about 100g to about 600g is contemplated, a dispensing force of from about 150g to 250g is further contemplated and ideally a dispensing force of less than 200g is desirable, with forces based on g/4.25 inches (g/108.0 mm). Normalized, these forces are 23.5 g/inch (0.93 g/mm) to 141.2 g/inch (5.56 g/mm), 35.3 g/inch (1.39 g/mm) to 58.8 g/inch (2.32 g/mm), and 47.1 g/inch (1.85 g/mm).

All publications, patents, and patent documents cited in the specification are incorporated by reference herein, as though individually incorporated by reference. In the case of any inconsistencies, the present disclosure, including any definitions herein, will prevail. While the invention has been described in detail with respect to the specific aspects thereof, it will be appreciated that those skilled in the art, upon attaining an understanding of the foregoing, may readily conceive of alterations to, variations of, and equivalents to these aspects which fall within the spirit and scope of the present invention, which should be assessed accordingly to that of the appended claims.

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